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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,046	02/02/2005	Gert Wim 'T Hooft	NL 020726	7578

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS
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EXAMINER	
LEE, HWA S	

ART UNIT	PAPER NUMBER
2886	

MAIL DATE	DELIVERY MODE
06/20/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/523,046	'T HOOFT ET AL.	
	Examiner	Art Unit	
	Hwa S. Lee (Andrew)	2886	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swanson et al. (US 6,160,826) in view of Bouma et al (Journal of Biomedical Optics cited in IDS of 2/2/05), Sharp et al. (Optical Society of America, cited in IDS of 9/12/05) and Sorin (US 5,365,335).

Swanson et al. (Swanson hereinafter) show an apparatus for performing optical frequency domain reflectometry comprising:

an optical source to emit an optical beam (14)

a sample space (38)

a photodetector (50)

an interferometer set-up (18) including

a reference reflector (34) and

a beam splitter-combination (30) arrangement to

split the optical beam into a reference beam to the reference reflector and a sample beam to the sample space and to

combine a reflected beam from the reference reflector with a returning beam from the sample space to form a combined beam, and provide the combined beam to a first port (50) of the photodetector.

Swanson teaches that the light source should be appropriately coated on the facets to suppress lasing and teaches that the gain medium fiber may be doped with thulium. Swanson however does not expressly teach the wavelength to be used when the medium is doped with Tm.

Bouma et al (Bouma hereinafter) show optical coherence tomography imaging at 1.81 μm using a Tm-doped fiber source. At the time of the invention, one of ordinary skill in the art would have used the imaging system at 1.81 μm in order to improve imaging depth penetration.

Swanson also does not show the details for the coatings of the Tm-doped fiber source producing 1.81 μm light.

Sharp et al. (Sharp hereinafter) show a mode-locked fiber laser doped with thulium characterized by low threshold pumping (energy level) achieved by use of coatings shown in Figure 1. At the time of the invention, one of ordinary skill in the art would have combined

Swanson with Sharp in order to prevent unwanted lasing and improve the 1.81 μm production by use of the cavity tuned to 1.81 μm.

Swanson does not expressly show the photodetector (50) to be a balance detector (i.e. "a further beam splitter which receives part of a radiation from the beam splitter-combination arrangement and couples out a reference signal to a second port of the photodetector, wherein the photodetector scales and subtracts the combined signal and the reference signal to form an output photodetector signal having a reduced nose for output from the photodetector").

Swanson however suggests the use of double balanced detection instead of the single photodetector shown (column 5, lines 46+).

Sorin shows a low-coherence reflectometer (including prior art) having a balance detector comprising a further beam splitter (22, 316, 342) which receives part of a radiation from the beam splitter-combination arrangement and couples out a reference signal to a second port (327 or 344) of the photodetector (327, 344, 346), wherein the photodetector scales and subtracts the combined signal and the reference signal to form an output photodetector signal having a reduced nose for output from the photodetector.

At the time of the invention, one of ordinary skill in the art would have, modified Swanson to have the balanced detector shown by Sorin in order to reduce noise as suggested by Swanson.

With respect to claim 6, the prior art of record does not expressly state the quality of the reflectivity; however a skilled artisan would have been motivated to use the highest reflectivity

available including less than 0.04.

Response to Arguments

4. Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Hwa S. Lee whose telephone number is 571-272-2419. The examiner can normally be reached on Tue-Fr.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur R. Chowdhury can be reached on 571-272-2800. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hwa S. Lee (Andrew)/

Primary Examiner, Art Unit 2886